Claims

1. A method for routing packets in a mobile ad hoc network comprising a plurality of wireless mobile nodes, wherein the mobile nodes maintain routing information on other mobile nodes, the method comprising the steps of:

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composing, in addition to network layer addresses, mobile node specific routing addresses from network layer addresses or unique mobile node device identifiers to be used as source and destination addresses of packets, and

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routing packets between the mobile nodes in the mobile ad hoc network on the basis of the routing addresses.

2. A method according to claim 1, wherein

the destination routing address of a packet to be routed is checked,

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the destination routing address from the IP address of the packet is composed if no destination routing address exists,

the path to the destination routing address is checked, and

the packet is sent to the next hop of the discovered path.

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3. A method according to claim 2, further comprising the step of:

maintaining a routing table for the paths to the mobile nodes, and checking the path from the routing table.

4. A method according to claim 2 or 3, wherein

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the path to the destination routing address is checked by broadcasting an inquiry to other mobile nodes if there is no routing table or no valid path available in the routing table.

5. A method according to claim 4, further comprising the step of:

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adding a routing extension to the packet describing the path in the source mobile node sending the packet, and

checking, in the intermediary mobile nodes, the path from routing extension of the packet.

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6. A method according to claim 1, wherein

the destination and source routing addresses are composed from the network layer destination and source IP addresses.

7. A method according to claim 6, wherein

the 64-bit routing addresses are composed by prepending zero bits or a special prefix to the IPv4 addresses, or

the 64-bit routing addresses are composed by using only the interface ID portion of the IPv6 addresses.

8. A method according to claim 1, wherein

the routing addresses are composed from unique mobile node device identifiers such as the IEEE 802 addresses,

the routing addresses composed from the unique mobile node device identifiers are used when acquiring an IP address for a mobile node, and

the source routing address is composed for packets originating from the mobile node on the basis of the acquired IP address.

9. A method according to claim 1, wherein

the routing is performed on the basis of one of the following routing protocols:

- Ad Hoc On-Demand Distance Vector (AODV)
- On-Demand Multicast Routing Protocol (ODMRP)
- Optimized Link State Routing Protocol (OLSR)
- Differential Destination Multicast (DDM) routing protocol
- Multicast Ad hoc On-Demand Distance Vector (MAODV) routing protocol
- Topology Broadcast based on Reverse-Path Forwarding (TBRPF)
- Dynamic Source Routing (DSR)
- Temporally-Ordered Routing Algorithm (TORA)
- Zone Routing Protocol for Ad Hoc Networks (ZRP)
- Source-Tree Adaptive Routing (STAR).

10. A mobile ad hoc network comprising a plurality of wireless mobile nodes, wherein

the mobile nodes are configured to maintain routing information on other mobile nodes,

the mobile nodes are configured to compose, in addition to network layer addresses, mobile node specific routing addresses from the network layer addresses or unique mobile node device identifiers to be used as source and destination addresses of packets, and

5 the mobile nodes are configured to route packets inside the mobile ad hoc network on the basis of the routing addresses.

11. A mobile ad hoc network according to claim 10, wherein

the ad hoc network is a short range radio frequency network and
10 the mobile nodes support the Bluetooth specification.

12. A mobile node of a mobile ad hoc network, wherein

the mobile node is configured to maintain routing information on other mobile nodes,

15 the mobile node is configuredcompose, in addition to network layer addresses, mobile node specific routing addresses from the network layer addresses or unique mobile node device identifiers to be used as source and destination addresses of packets, and

the mobile node is configured to route packets inside the mobile ad
20 hoc network on the basis of the routing addresses.

13. A mobile node according to claim 12, wherein the mobile node is configured to:

check the destination routing address of a packet to be routed,
25 compose the destination routing address from the IP address if there is no destination routing address,

check the path to the destination routing address, and

send the packet to the next hop of the discovered path.